Question	Answer
6.	1. Given 2. Def. of ∠ bisector 3. Def. of ≅ △s 4. Given 5. Subst. 6. ∠ Add. Post. 7. Subst. 8. Simplify. 9. Def. of rt. ∠
7a.	$m\angle 1 + m\angle 2 = 180^\circ$, $m\angle 3 + m\angle 4 = 180^\circ$
7b.	Subst.
7c.	$m\angle 1 = m\angle 4$
7d.	Def. of ≅ △s
8a.	Def. of rt. ∠
8b.	$m\ 1 + m\angle 2 = m\angle BAC$
8c.	$m\angle 2 = m\angle 3$
8d.	Subst.
8e.	∠1 and ∠3 are comp.

<table>
<tr><th>Question</th><th>Answer</th></tr>
<tr><td>9.</td><td>
<table>
<tr><th>Statements</th><th>Reasons</th></tr>
<tr><td>1. $\overline{BE} \cong \overline{CE}$, $\overline{DE} \cong \overline{AE}$
2. $BE = CE$, $DE = AE$
3. $AE + BE = AB$,
$CE + DE = CD$
4. $DE + CE = AB$
5. $AB = CD$
6. $\overline{AB} \cong \overline{CD}$</td><td>1. Given
2. Def. of ≅ segs.
3. Seg. Add. Post.

4. Subst.
5. Subst.
6. Def. of ≅ segs.</td></tr>
</table>
</td></tr>
<tr><td>10.</td><td>
<table>
<tr><th>Statements</th><th>Reasons</th></tr>
<tr><td>1. ∠1 and ∠3 are comp., ∠2 and ∠4 are comp.
2. m∠1 + m∠3 = 90°, m∠2 + m∠4 = 90°
3. m∠1 + m∠3 = m∠2 + m∠4
4. ∠ 3 ≅ ∠4
5. m∠ 3 = m∠4
6. m∠ 1 = m∠2

7. ∠1 ≅ ∠2</td><td>1. Given

2. Def. of comp. ∡s
3. Subst.
4. Given
5. Def. of ≅ ∡s
6. Subtr. Prop. of =
7. Def. of ≅ ∡s</td></tr>
</table>
</td></tr>
<tr><td>15.</td><td>Possible answer: because the ∡s can be supp. or comp. to the same ∠ or to 2 ≅ ∡s.</td></tr>
<tr><td>16.</td><td>S</td></tr>
<tr><td>17.</td><td>S</td></tr>
<tr><td>18.</td><td>S</td></tr>
<tr><td>19.</td><td>N</td></tr>
<tr><td>22.</td><td>12</td></tr>
<tr><td>23.</td><td>Possible answer: A thm. and a post. are both true statements of geometric facts. They are different because a post. is assumed to be true, while a thm. must be proven to be true.</td></tr>
</table>

<table>
<tr><th>Question</th><th>Answer</th></tr>
<tr><td>24a.</td><td>Given: Y is the mdpt. of $\overline{AC}$.
X is the mdpt. of $\overline{AB}$.
Prove: $XY = \frac{1}{2}BC$</td></tr>
<tr><td>24b.</td><td>Given: $\angle C$ is a rt. $\angle$.
Prove: $\angle A$ and $\angle B$ are comp.</td></tr>
<tr><td>24c.</td><td>Given: $\angle C$ is a rt. $\angle$.
Prove: $(AB)^2 = (AC)^2 + (BC)^2$</td></tr>
<tr><td>28.</td><td>
<table>
<tr><th>Statements</th><th>Reasons</th></tr>
<tr><td>1. $m\angle LAN = 30°$
2. $m\angle 1 + m\angle 2 = m\angle LAN$
3. $m\angle 1 + m\angle 2 = 30°$
4. $m\angle 1 = 15°$
5. $15° + m\angle 2 = 30°$
6. $m\angle 2 = 15°$
7. $m\angle 1 = m\angle 2$
8. $\angle 1 \cong \angle 2$
9. $\overrightarrow{AM}$ bisects $\angle LAN$.</td><td>1. Given
2. $\angle$ Add. Post.
3. Subst.
4. Given
5. Subst.
6. Subtr. Prop. of =
7. Trans. Prop. of =
8. Def. of $\cong$ $\measuredangle$
9. Def. of $\angle$ bisector</td></tr>
</table>
</td></tr>
<tr><td>30.</td><td>$x = 6$; 138° and 42°</td></tr>
</table>